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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of

Co-Channel Protection
Criteria for Part 90,
Subpart S Stations
Operating Above 800 MHz

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PR Docket No. 93-60
RM-8028

To: The Commission

COMMENTS OF THE E.F. JOHNSON COMPANY

The E.F. Johnson Company ("E.F. Johnson"), by its attorneys, pursuant to Section 1.415 of the Rules and Regulations of Federal Communications Commission ("FCC" or "Commission"), hereby submits its Comments in response to the Notice of Proposed Rule Making ("Notice") adopted by the FCC in the above-referenced proceeding^{1/} in which the Commission proposes to modify the co-channel protection criteria for Private Land Mobile Systems in the 800 and 900 MHz bands.

I. INTRODUCTION

E.F. Johnson is a leading designer and manufacturer of radio communication systems and specialty communications products for commercial and public safety use. Founded 70 years ago as an electronic components manufacturer, E.F. Johnson entered into the radio communications equipment market in the late 1940s and is

^{1/} Notice of Proposed Rule Making, PR Docket No. 93-60, FCC 93-140, released April 7, 1993.

one of the three largest providers of land mobile radio systems in the United States. E.F. Johnson is one of the leaders in the SMR industry with a significant share of the domestic installed infrastructure and subscriber radio units. The company has established trunking protocols and open architecture standards with its clearchannel LTR®, a multichannel trunked radio product.

The Commission's proposal is responsive, in part, to the Petition for Rule Making submitted by the National Association of Business and Educational Radio, Inc. ("NABER")^{2/} NABER's petition addressed the co-channel separation requirements for channels in the General Category and Business pools. The Commission's action is also responsive to a Petition for Partial Further Reconsideration submitted by Motorola in the Docket No. 90-34 proceeding. In its pleading, Motorola outlined the inadequacy of employing 40/30 dBu analyses in determining the co-channel separation criteria for SMR stations.^{3/}

E.F. Johnson supports the Commission's efforts to better develop the separation criteria for co-channel facilities. Licensees should operate in an environment that is as

^{2/} Petition for Rule Making, RM 8028, filed March 6, 1992.

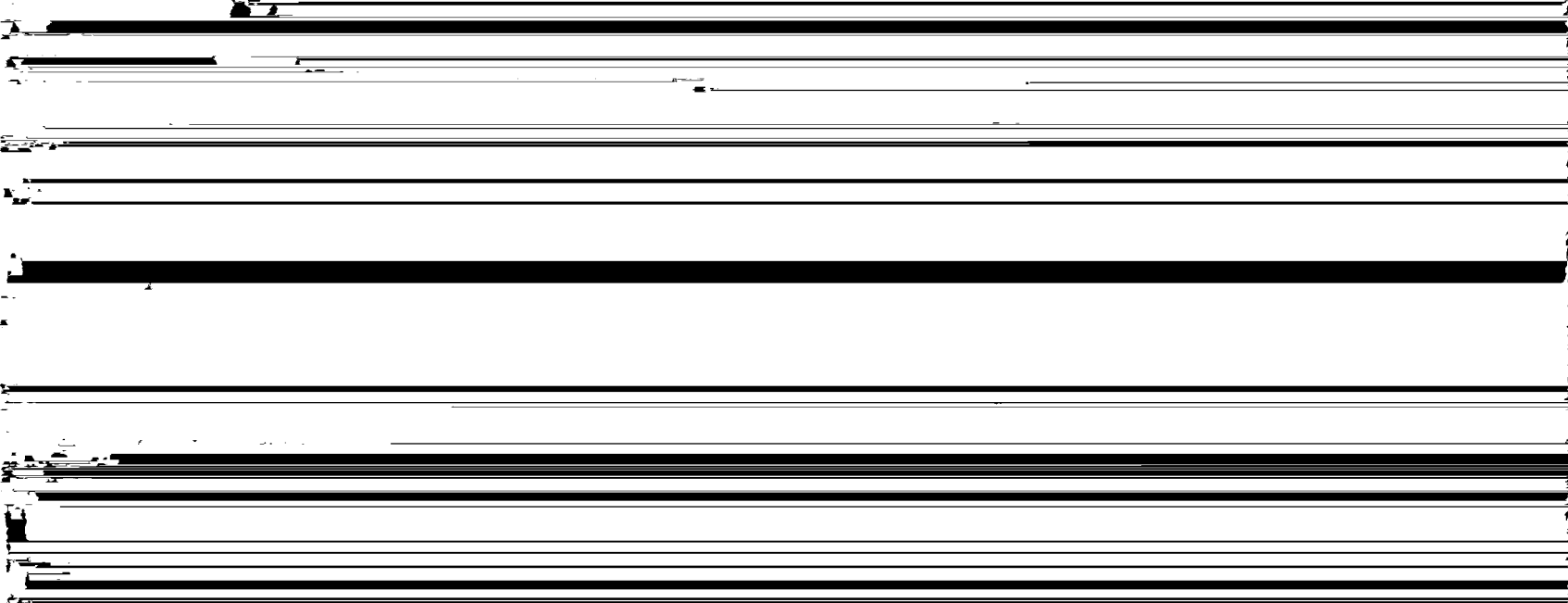
^{3/} The Commission accepted the use of 40/30 dBu analyses in cases where applicants proposed waiver of the regulations, which otherwise required 70 mile separation or compliance with the table contained in section 90.621(b)(4) of the regulations. The Commission stopped accepting waiver requests based upon the 40/30 dBu separation criteria as a result of its Order, DA 92-1570, released November 16, 1992.

there have been significant technical advances which have made them, in many instances, obsolete. In 1974, when adopting the existing rules, the Commission determined that the use of a 40/30 dBu contour criteria would provide adequate protection from interference.^{4/} Specifically, the Commission determined that the undesired signal should be 10 dBu down from the desired

arrive at 40/22.^{2/} Thus, theoretically, the 40/22 dBu standard provides SMR licenses with the same interference protection currently enjoyed by cellular operators. E.F. Johnson agrees that SMR providers should receive at least as much channel protection as cellular operators. In fact, E.F. Johnson asserts that SMR providers need even more interference protection.

Cellular operators have control over a geographic region and, thus, for the most part, can control the level of interference in that region. SMR operators, however, do not have that luxury and do not have any control over co-channel or adjacent channel use in their same geographic region. Thus, E.F. Johnson supports the Commission's proposal to increase interference protection for SMR systems so that such systems are at least as protected as cellular operators.

Finally, E.F. Johnson agrees with the Commission that there is no sound reasoning for disparate treatment of SMR and non-SMR channels and urges the adoption of a 40/22 dBu protection criteria for both types of channels. As the Commission recognized, the current distinctions are confusing, burdensome,



and may not be accurate for specific local conditions.^{2/} E.F. Johnson generally does not oppose the continued use of the R-6602 curves because of the administrative convenience their use offers. To the extent that modifications can be made to the use of the R-6602 curves that preserve their administrative convenience with a more accurate reflection of protection requirements, E.F. Johnson would support those changes.

There are two cases today where such continued use of the R-6602 curves raise significant interference potential. These situations should be addressed in the context of this rule making proceeding. The R-6602 methodology assumes an average terrain roughness. Such an assumption does not provide adequate interference protection where (1) the terrain is smooth and flat such as portions of Florida, the midwest and other areas; or (2) the terrain is mountainous or rugged and extreme drops occur, such as in portions of Southern California, Oregon and Washington. Where the terrain is smooth and flat, signal intensities do not fall off quickly when traveling away from the transmitter site and can carry for great distance. Likewise, where a significant drop in terrain occurs, signals can carry much further. Thus, in both cases, use of the average R-6602 curves does not provide adequate protection and actual terrain

^{2/} Since the Commission proposes use of either a 70 mile distance separation or the 40/22 dBu table, frequency coordination would no longer be required on a regular basis.

features should be taken into account. Consideration of such terrain factors is in the public interest since, absent such consideration, interference to licensees and significant degradation in signal quality could result.

The Commission should recognize, therefore, that licensees may validly object to the grant of a co-channel station (or validly petition to reconsider the issuance of an authorization of a co-channel station) in instances of flat terrain. Frequency coordinators can play an important role in ensuring that particularly flat areas receive greater protection than that offered by the 40/22 dBu tables. Unfortunately, SMR licensees are not routinely notified when an application for co-channel facilities is submitted. Nevertheless, the regulations should recognize that the presence of flat terrain is the basis for : (1) a valid objection to a pending application; (2) a basis for a petition for reconsideration; or (3) a requirement that the later licensed entity take whatever measures are necessary to eliminate the interference, including cessation of operations.

E.F. Johnson recognizes that there are instances that support the location of co-channel facilities closer than might be allowed in the 40/22 dBu table. However, the Commission's previous practice of permitting routine waivers of the co-channel separation requirement based upon engineering studies that satisfied the 40/30 dBu separation criteria is not acceptable.

Any waivers must be supported by truly unique circumstances and should be reserved for situations where unusual topographic considerations apply.

C. Proposed Separation Distances

The Commission proposes to continue use of its existing 70 mile (114 km) distance separation standard. E.F. Johnson supports the continued use of this standard, so long as stations have the option to utilize the 40/22 dBu table where low power operations are proposed. In this way, applicants would be able to rely on a general standard for high power, high tower operations while, at the same time, have the option of utilizing the table where circumstances warrant a more specific analyses, such as where low power or low antenna height is proposed.

D. Transmitter Power/Antenna Height Limits

Comments are requested on whether there is still a need to distinguish between, and have separate rules for, stations in different settings and having a different service area requirements. E.F. Johnson agrees with the Commission that the proposed separation table addresses the concerns regarding different types of stations. Different regulations for stations in different locations is administratively burdensome, except where the regulations recognize valid terrain differences as the basis for different treatment.

E. Interference To/From Mobile Units

The FCC questions whether its increased protection of 40/22 dBu will resolve concerns regarding interference to and from mobile units. E.F. Johnson agrees with the Commission, that adoption of the 40/22 dBu standard will help alleviate interference concerns. Additional measures, if adopted, should not be administratively burdensome. The Commission may wish to revisit the requirement to provide more protection to and from mobile units as low power systems proliferate.

III. CONCLUSION

E.F. Johnson fully supports the Commission's proposals to provide increased interference protection for co-channel SMR licensees. Such changes are long overdue and, in light of the significant technical advances since the adoption of the current rules, are necessary to adequately protect SMR operations and ensure good quality signals.

WHEREFORE, THE PREMISES CONSIDERED, E.F. Johnson submits the foregoing Comments and urges the Commission to adopt regulations consistent with the views expressed herein.

Respectfully submitted,

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